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A new millipede of the genus *Gonographis* from an inundation forest near Manaus, Brazil (Pyrgodesmidae)*

by

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Abstract

Gonographis adisi (Pyrgodesmidae, Diplopoda) is newly described from a blackwater inundation forest near Manaus, Amazonas, Brazil. The species is able to survive submersion of up to eleven months.

Keywords: **millipede, Diplopoda, Neotropics, inundation, Brazil.**

Resumo

Gonographis adisi (Pyrgodesmidae, Diplopoda), proveniente da floresta inundada, por agua preta, perto de Manaus, é descrita. A espécie é capaz de sobreviver até onze meses de submersão.

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Among the Diplopoda collected by Dr. Joachim Adis during his ongoing studies of arthropods of an Igapó forest along the Rio Tarumã Mirím near Manaus (ADIS 1984) and submitted to me for identification are several species of the edaphobitic family Pyrgodesmidae. One of these is of special interest owing to its ability to survive prolonged submersion (up to 11 months), and forms the subject of a paper by Dr. Adis now in press (ADIS 1985).

Insofar as I can ascertain, this species appears to be an undescribed member of the so-far monotypic genus *Gonographis* (SCHUBART 1945). It may be stressed, however, that knowledge of the large and multiformous family Pyrgodesmidae is still in its infancy and the classification adopted here is subject to later modification.

Pyrgodesmidae
Genus *Gonographis* SCHUBART
Gonographis SCHUBART, 1945, Arq. Mus. Nac. Rio de Janeiro, vol. 38, p. 86.

Type species: *G. hastata* SCHUBART, by monotypy.

Diagnosis: Male and female with 20 segments. Ozopores on short, inconspicuous porosteles on segments 5, 7, 9, 10, 12, 13, 15 - 16, and flush on paranotal surface on segments 17 - 19. Collum with ten marginal lobes. Surface of head uniform, no elevated or darkly-pigmented epicranial region. Tergal ornamentation (see HOFFMAN 1976 for nomenclature) with the usual PM and DL series of tubercles, but these not hypertrophied nor coalesced, 3rd PMs of segment 19 prolonged over base of epiproct in one species, not so in the second; five pairs of mds, int. in a single series on each side. LPs not thickened nor margined, LP 3 mostly displaced by porosteles on poriferous segments. Legs of male not modified.

Coxae of gonopods globosely enlarged, their surface finely granulate and sparsely setose. Telepodite with transverse, densely setose prefemur; major branch of acropodite a thin, laminate blade with rounded apex, a prominent, laterally-curved ramphium on anterior (oral) side at base and slender laminate-acicular solenomerite on posterior (aboral).

Distribution: The two members of this genus are known from the vicinity of Manaus (*G. adisi*), and from Rio de Janeiro and the interior of São Paulo (Pirassununga) (*G. hastata*), the latter perhaps synanthropic.

Gonographis adisi, new species
(Figures 1 - 3)

Material: Brasil: Edo. Amazonas: Igapó of Rio Tarumã Mirím, ca. 20 km northwest of Manaus, affluent of Rio Negro, ♂ holotype and ♀ paratype, Instituto Nacional de Pesquisas da Amazônia (INPA), Manaus, collected 27 March 1984, Joachim Adis leg. Additional topoparatypes in Museu de Zoologia, Universidade de São Paulo and United States National Museum, Washington, D. C. (each 1 ♂, 1 ♀).

Holotype: Adult male, length ca. 6.8 mm. Coloration dorsally dilute testaceous yellow, ventrally shading into white.

Head opisthognathous, distinctly flattened, epicranium with four indistinct posteriorly divergent ridges, the lateralmost two forming with the elevated genae a kind of groove into which the basal three antennomeres are accomodated. Antennae geniculate between articles 3 and 4, 6th article by far the largest.

Collum subhemispherical, with ten marginal lobes, each slightly elevated distally; disk with six large conical tubercles in an irregular transverse median row, and four similar tubercles in a marginal posterior row. Surface irregularly ornamented with small granular tubercles.

Surface of prozona and ventral parts of metazona densely microgranulate. Appearance of metaterga as described under generic diagnosis and illustrated in fig. 1. Tubercles of series PM and DL largest, rather acutely conical, most prominent on anterior segments. Porosteles cylindrical with apex slightly flared.

Epiproct entirely exposed in dorsal aspect, series PM represented chiefly by a low short ridge and what appears to be PM 3; series DL present in marginal position, no tubercles enlarged and apex of segment thus completely visible in dorsal aspect.

Legs unmodified, tarsus distinctly narrower than tibia.

Gonopods large, of the form described in the generic diagnosis and illustrated in figs. 2 and 3.

Paratype: Adult female, length ca. 8.0 mm. Similar to male in coloration and details of tergal sculpture, except tubercles somewhat less prominent and acute. Sterna a little wider than in male, and paranota relatively smaller.

Remarks: *G. adisi* agrees rather closely with the type species *G. hastata* in gonopod structure, but differs in details of telepodite form such as the much broader prefemoral process and the large recurved apical spine. A major difference in external form is the enlarged condition of PM 3 of segment 19 in *G. hastata* which projects caudally enough to mostly conceal the epiproct.

G. hastata was first discovered in Tijuca, Distrito Federal, and later in cultivated areas around Pirassununga, S. P. SCHUBART (1944) considered it to be probably synanthropic. It would be interesting to test this species for any innate ability to resist submersion.

Although *Gonographis* and *G hastata* are first published as new taxa in 1945, the names appeared one year earlier (August 1944) in a study of the diplopods of Pirassununga.

References

ADIS, J. (1984): "Seasonal Igapó"-Forests of Central Amazonian Black-Water Rivers and their terrestrial Arthropod Fauna.- In: SIOLI, H. (ed.): The Amazon – Limnology and landscape ecology of a mighty tropical river and its basin: 245 - 268, Monographiae Biologicae, Junk, Dodrecht.

ADIS, J. (1985): An "aquatic" millipede from a Central Amazonian inundation forest.- Nature (in press).

HOFFMAN, R. L. (1976): A new lophodesmid millipede from a Guatemalan cave, with notes on related forms (Polydesmida: Pyrgodesmidae).- Rev. Suisse Zool. **83:** 307 - 316, figs. 1 - 12.

SCHUBART, O. (1944): Os Diplopodos de Pirassununga.- Acta Zool. Lilloana **2:** 321 - 440, figs. 1 - 85.

SCHUBART, O. (1945): Os Proterospermophora do Distrito Federal.- Arq. Mus. Nac. **38:** 1 - 156, figs. 1 - 138.

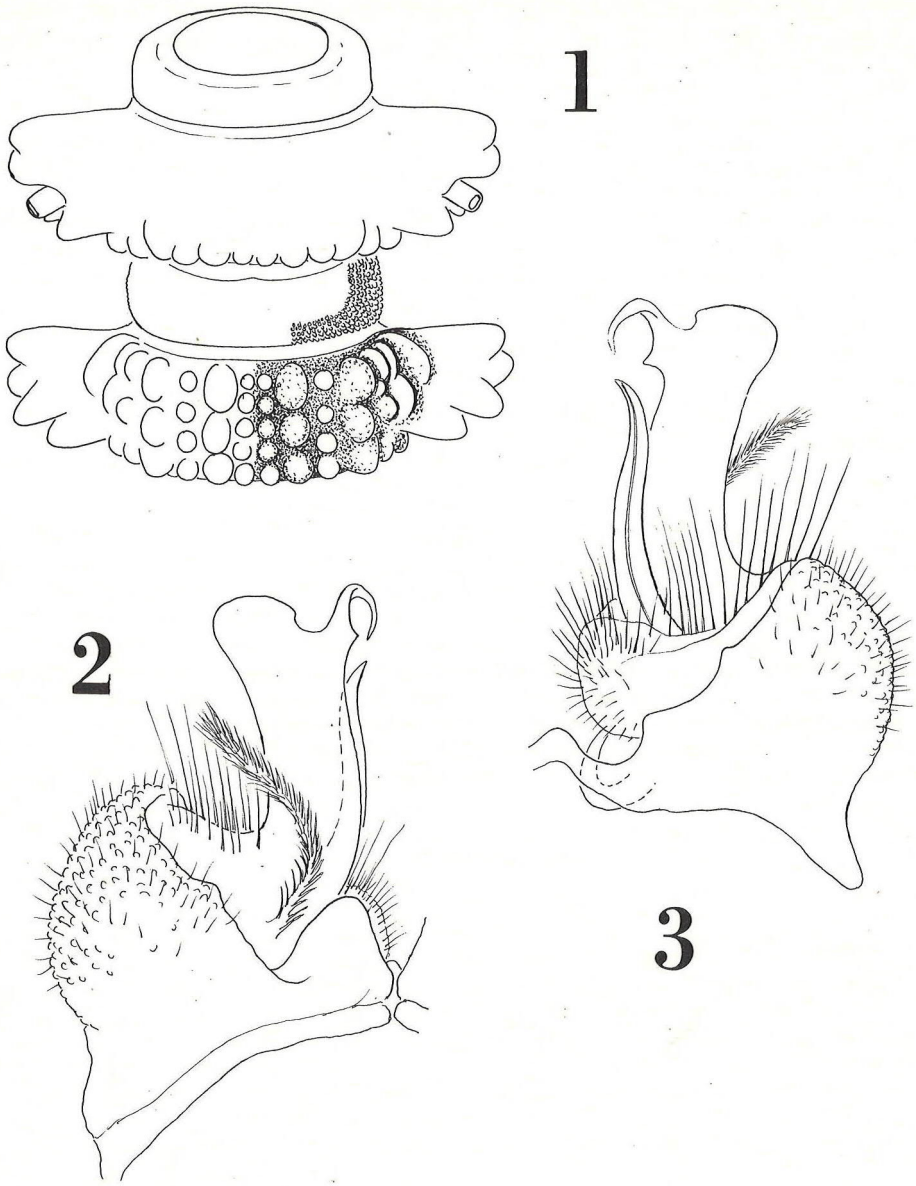

Fig. 1 - 3:
Gonographis adisi spec. nov.
1: Segments 10 and 11, dorsal aspect, showing location of porosteles, texture of prozona, and arrangement of tubercles. **2:** Left gonopod, oral (anterior) aspect. **3:** Left gonopod, aboral (posterior) aspect. – Drawings from male paratype.